(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 527 242 A1**

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
28.11.2012 Bulletin 2012/48

(51) Int Cl.:
B63B 9/06 *(2006.01)*

(21) Application number: **11004292.6**

(22) Date of filing: **25.05.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

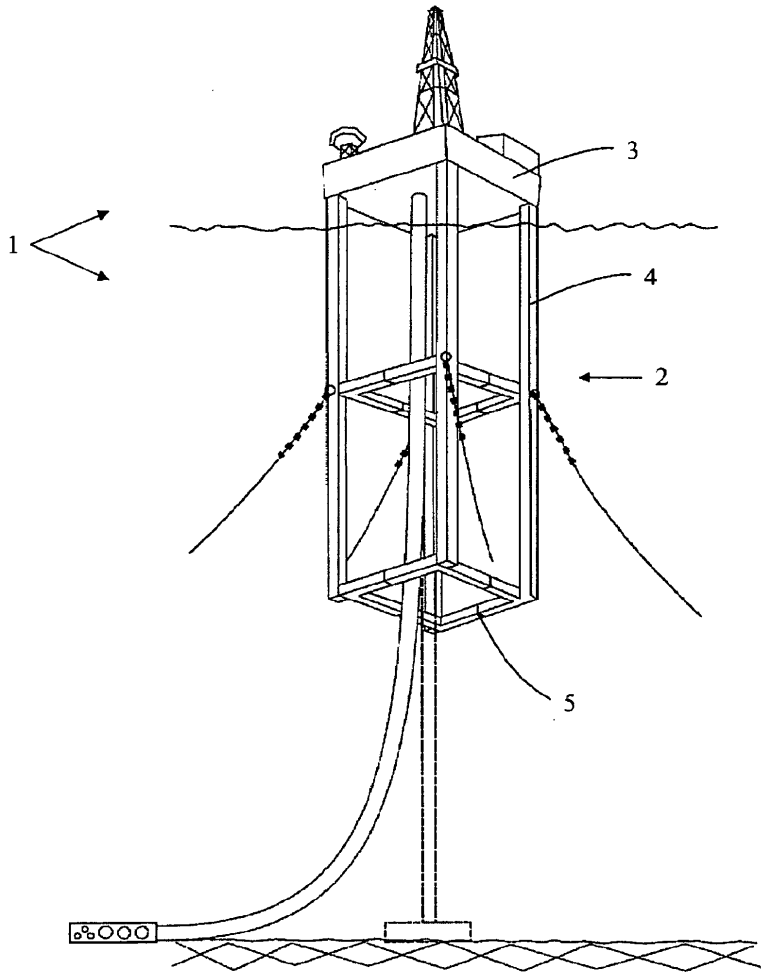
(71) Applicant: **Leenaars, Cees Eugen Jochem**
3225LE Hellevoetsluis (NL)

(72) Inventor: **Leenaars, Cees Eugen Jochem**
3225LE Hellevoetsluis (NL)

(54) Installation method of an offshore upended float-over platform

(57) The invention relates to a method for transporting and installing a floating offshore base (1) consisting of a multi-columned floater (2) supporting a platform (3) above water. The floater (2) is transported horizontally to the site and upended. The platform (3) is transported to the site on a barge or any other vessel and installed onto the floater (2) by means of a float-over operation in between the columns (4) of the floater.

Figure 2



EP 2 527 242 A1

Description

Background of the invention

[0001] There is an increasing demand for oil and gas production from offshore deep water sites. These sites encounter high winds and waves, which can result in unacceptable heaving, pitching and rolling of the offshore structure, for the production of oil in deep waters. Besides this, with the installation of an offshore platform difficulty arises with the installation of the deck. Float-over (floating the deck over a support structure) has not been possible offshore in wave heights of 1m and higher due to the large forces created by the relative motions between deck and support structure. Present spar designs with one or multi-column are difficult to transport and float-over is based on floating around the support structure.

[0002] The purpose of this invention is to create an offshore base with good motion response in high waves and strong winds. Which can be installed at an offshore location in 2 to 3 meters significant wave height by float over in between the legs. This way the down time risk for the installation will be acceptable for all offshore oil fields.

Description of the invention

[0003] The invention relates to an offshore base with a floating support structure, consisting of multiple slender legs, on which a platform can be placed. The vertical legs, called columns, carry the platform by buoyancy. The long columns produce very acceptable motions of the platform even in strong winds and high waves.

[0004] The support structure, or floater, can be divided into two or more parts, which can be transported horizontally, so that mobilization is easy. It can be placed in vertical position at the offshore site by consecutive flooding of ballast tanks. This is called upending.

[0005] The deck, preferably with fully completed facilities, is floated over between the columns that are so wide apart that a barge or deck fits in between the vertical columns, limiting the work offshore to an absolute minimum.

[0006] Dedicated tanks are available in the columns that can be emptied in a matter of seconds by compressed air to prevent hammering during the initial contact phase and the lift off phase.

Description of the drawings

[0007]

Figure 1 shows a perspective view of an offshore base (1), which consist of a floater (2) and topside (3). The floater (2) consists of two or more columns (4). The columns (4) are positioned such that a vessel or barge can be floated in between the columns (4) to install the topside (3). The columns (4) are connected by horizontal members (5), called bracings.

Figure 2 shows a four -columned configuration.

Figure 3 shows a float-over operation by means of a vessel (6). Once the floater (2) is upended, the topside (3) is floated in between the columns (4) on a vessel (6).

Claims

1. A floating offshore structure that consist of multiple columns whereby the floater is upended offshore and the topside is installed with a float-over operation in between the columns.

2. A platform according to claim 1 whereby the floater is transported in a horizontal manner and upended by ballasting.

3. A platform according to claim 1 whereby the topside is positioned and lowered onto the floater by means of any type of vessel.

Figure 1

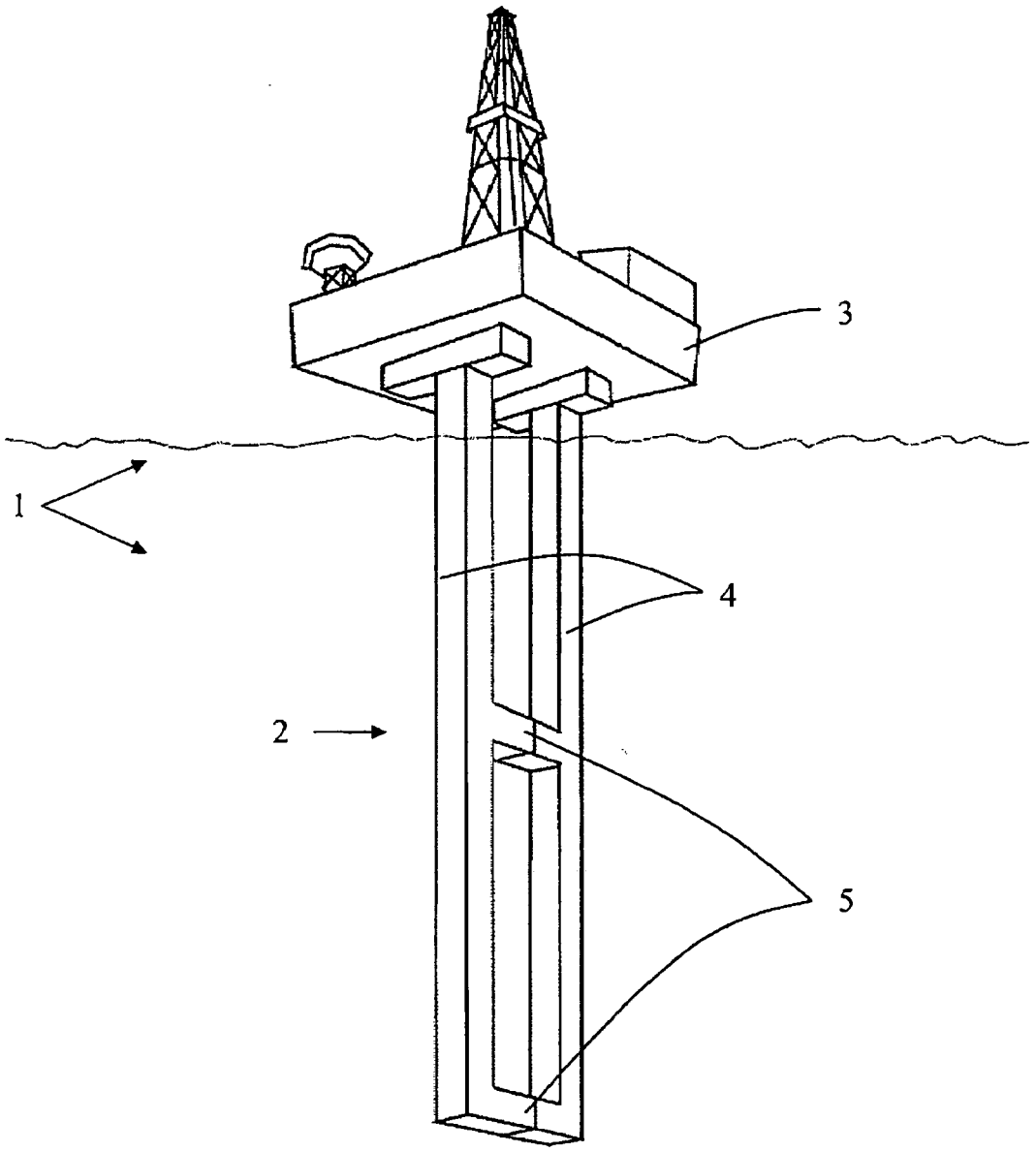


Figure 2

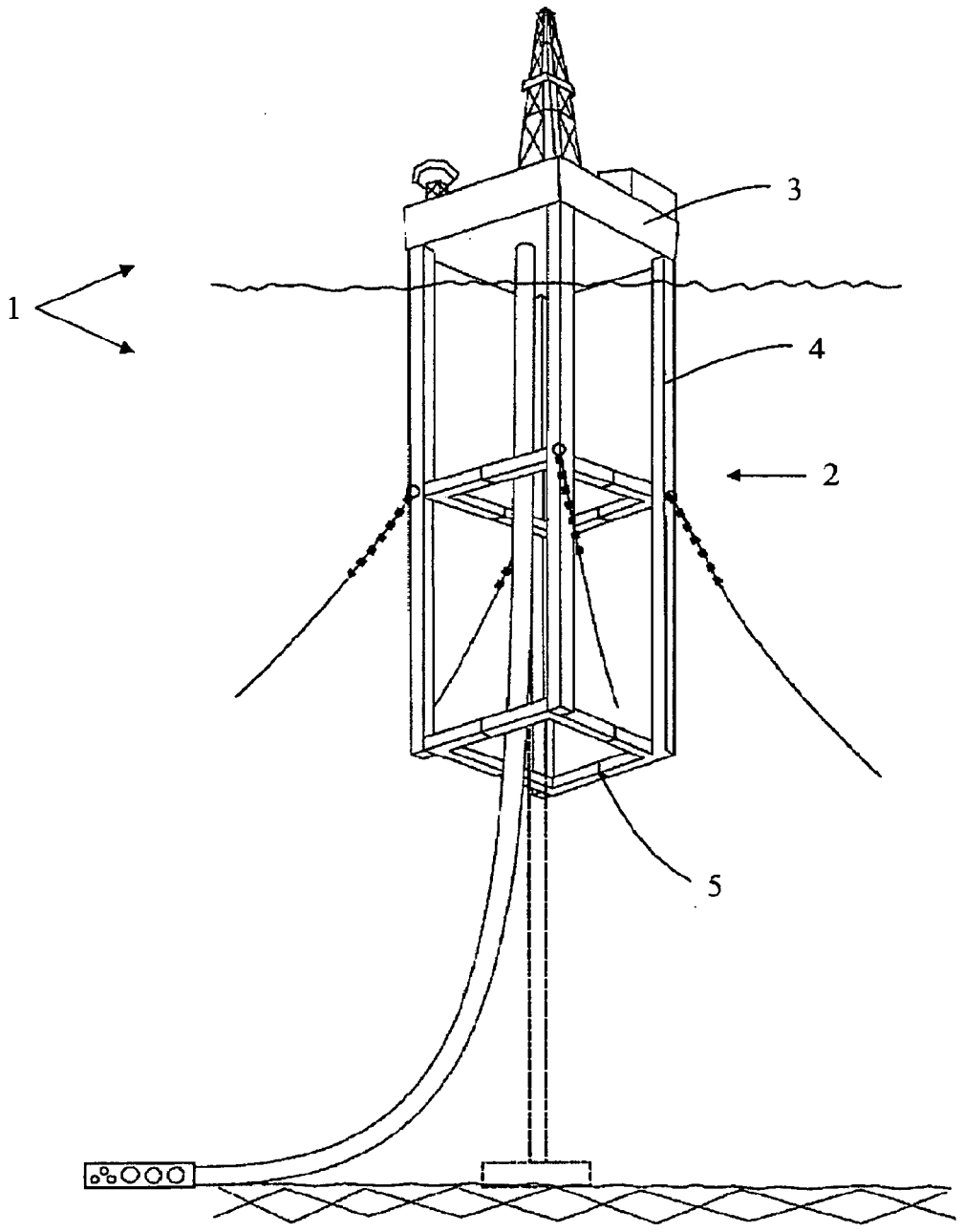
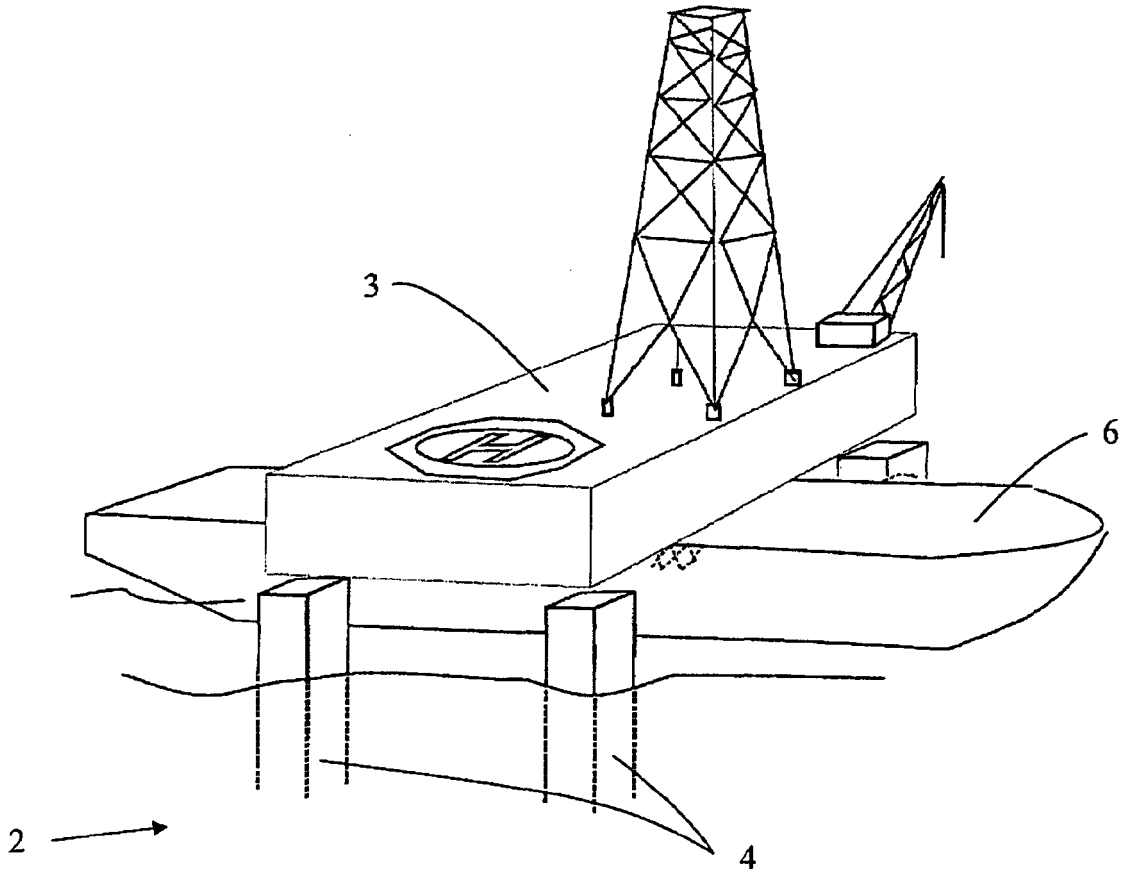


Figure 3



Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 11 00 4292

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2004/096632 A1 (LEENAARS B V [NL]; LEENAARS LONNEKE [NL]) 11 November 2004 (2004-11-11) * abstract; figures * * page 7, lines 1-29 *	1-3	INV. B63B9/06
X Y	GB 2 328 408 A (KVAERNER OIL & GAS AUSTRALIA P [AU]) 24 February 1999 (1999-02-24) * page 14, lines 13-24; figures 17-26 *	1,2 3	
X Y	US 2008/056829 A1 (HORTON EDWARD E [US] ET AL HORTON III EDWARD E [US] ET AL) 6 March 2008 (2008-03-06) * figures 1,8,11 *	1,2 3	
X Y	US 2004/253060 A1 (HORTON EDWARD E [US] HORTON III EDWARD E [US]) 16 December 2004 (2004-12-16) * figures 8-10 *	1,3 3	
			TECHNICAL FIELDS SEARCHED (IPC) B63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 October 2011	Nicol, Yann

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 00 4292

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-10-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2004096632 A1	11-11-2004	NL 1023320 C2	02-11-2004
		US 2006204340 A1	14-09-2006
GB 2328408 A	24-02-1999	AU 746242 B2	18-04-2002
		AU 8816698 A	16-03-1999
		WO 9910230 A1	04-03-1999
		US 6273018 B1	14-08-2001
US 2008056829 A1	06-03-2008	WO 2008030689 A2	13-03-2008
US 2004253060 A1	16-12-2004	BR PI0411108 A	18-07-2006
		GB 2419114 A	19-04-2006
		OA 13213 A	13-12-2006
		WO 2004110855 A2	23-12-2004

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82